

### **DETAILED ACTION**

1. Applicants' Response to the Final Office action was received on 3/23/11.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.
3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### **REASONS FOR ALLOWANCE**

4. The following is an examiner's statement of reasons for allowance: The instant claims are to a separator for a battery that is coated with a gel polymer over 40-60% of a total separator area based on a surface of the separator to be coated with the gel polymer. The separator is partially coated with the gel polymer by a gravure coating method which forms a pattern of coated and uncoated gel areas. The thickness of the gel polymer is from 1-2 micrometers. The Applicants' further defines a gel polymer to be defined as "a polymer absorbing a liquid electrolyte spontaneously and thus becoming gelled and swollen" in Page 7 of Applicant's specification.

The closest prior art EP 0982790 to Yoshida reference discloses Regarding claims 1, 5, the Yoshida et al. reference discloses a battery separator coated with an adhesive that comprises softening points (P29, P53, P54) and about 60% (P27; Applicant's over 40-60%) of the total separator area based on a surface of the separator to be coated with the gel polymer. The separator is partially coated with a gel polymer in which coated or non-coated areas from a pattern (Fig. 2). The Yoshida reference does not disclose, nearly disclose or provide motivation to modify the adhesive to be a gel

polymer because adhesive and gel polymers are not synonymous according to the definition disclosed by the Applicant's specification.

The prior art JP 10-289732 to Michio et al. reference discloses a thermoplastic gel polymer consisting of polyvinylidene fluoride in conventional batteries and are ion conductors (P5) that provides adhesion between the anode/separator and cathode/separator interface. The Michio reference also discloses at high temperatures the polyvinylidene fluoride is easily influenced or the polyvinylidene fluoride easily melts at high temperatures (P6-9). However, the Michio reference does not discloses, nearly disclose or provide motivation to modify the separator to comprise a coated gel polymer over 40-60% of a total separator area based on a surface of the separator to be coated with the gel polymer. The separator is partially coated with the gel polymer by a gravure coating method which forms a pattern of coated and uncoated gel areas. The thickness of the gel polymer is from 1-2 micrometers.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELEN O.K. CONLEY whose telephone number is

(571)272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helen O.K. Conley/

Primary Examiner, Art Unit 1726